

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

EP 0 739 600 A1

(12)

## EUROPEAN PATENT APPLICATION

(43) Date of publication:  
30.10.1996 Bulletin 1996/44

(51) Int Cl.<sup>6</sup>: A47L 13/20, A47L 13/24

(21) Application number: 96500034.2

(22) Date of filing: 21.03.1996

(84) Designated Contracting States:  
DE ES FR GR IT PT

(72) Inventor: Martínez, Juan Gunfaus  
08223 Terrassa, (Barcelona) (ES)

(30) Priority: 22.03.1995 ES 9500751 U

(74) Representative: Durán Olivella, Alfonso et al  
DURAN-CORRETJER, S.L.,  
Paseo de Gracia, 101  
08008 Barcelona (ES)

(71) Applicant: MERY, S.A.  
08223 Terrassa (Barcelona) (ES)

(54) Floor mop

(57) The mop is formed by a first layer of cleaning strips in a regular or irregular radial arrangement of an absorbent woven material (1) followed by an intermedi-

ate layer based on strips of braid (2) and a lower layer of strips of non-woven material (3), all in a regular or irregular radial arrangement.

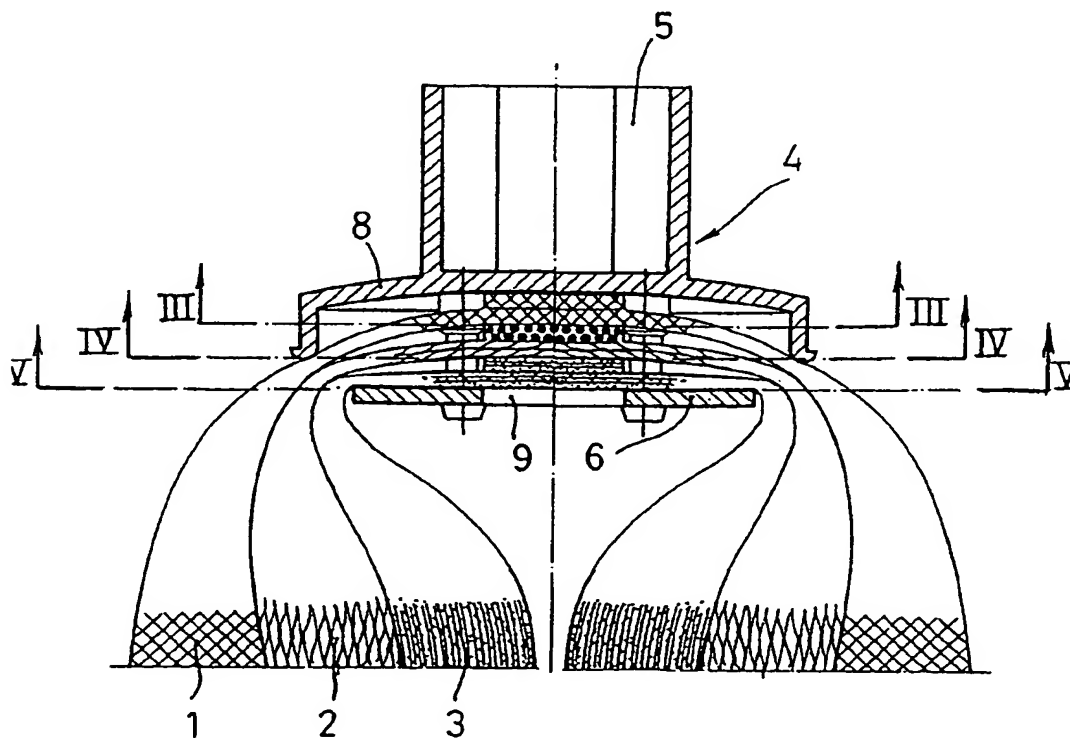


FIG. 1

## Description

The present invention relates to a floor mop which introduces features of novelty and inventive activity over the prior art.

Many types of floor mop are currently known which comprise a gripping handle and a part in the form of a disc for securing the cloth of the mop. The cloth is customarily formed by sheet-form elements in one piece, imitating the manual cloths traditionally used, or in some cases the cloth is substituted by a group of braids forming a mass which imitates the mentioned cloths. Owing to their construction, the floor mops known at present have a reduced functional efficiency, like the mops traditionally known and used.

The floor mop forming the subject-matter of the present invention has a novel structure intended to achieve a more efficient and longer-lasting functioning of the mop and, at the same time, some structural features which render its manufacture and assembly more economical.

The mop forming the subject-matter of the present invention is formed firstly by a combination of various groups of cleaning elements in the form of sheet-form strips of absorbent wiping material which adopt an arrangement of a number of layers, forming various groups distributed radially around the axis of the mop handle.

Each of the cleaning elements is preferably in the form of an elongate strip which is fastened in the central portion or securing hub of the mop and its handle, in a regular or irregular radial arrangement, the mop preferably being formed by a first layer or upper layer based on strips of woven material, an intermediate layer based on strips of braid and a lower layer or closing layer based on strips of non-woven material. The combination of the strips of woven and non-woven material and the strips of braid in the mentioned distribution confers features of special efficiency on the mop.

The holding of the individual sheet-form elements in the central portion or securing hub attached to the handle is effected by means of a system of hollow rods which exhibit considerable radial resilience, having near their ends an external frustoconical structure which forms a suspension hook-like border having a structure such that it fits in recesses shaped to mate with the securing plate, which is penetrated by the hollow rods. The securing plate is formed by a moulded part having a large central opening permitting the passage of liquids and also has a series of lower reinforcing ribs for increasing its strength, which ribs preferably start in the immediate vicinity of the housings for the frustoconical tops of the hollow rods.

According to another embodiment of the invention, the mop may be formed by a layer of upper strips of the woven or non-woven type and a lower layer of braids. Equally, consideration may be given to a variant based on an upper layer of strips of woven material and a lower

layer of strips of non-woven material. According to another variant, the mop may be formed on the basis of an upper layer composed of strips of non-woven material and a lower layer composed of strips of woven material.

In any case, the arrangement of the cleaning strips will be in regular or irregular radial form and they will be secured in an analogous manner by means of a reinforced closing plate and hollow rods.

For a better understanding of the invention, some explanatory drawings of a mop produced in accordance with the present invention are appended by way of example.

Figure 1 shows a section through a mop produced in accordance with the present invention, Figures 2, 3, 4 and 5 each showing sectional details through the indicated sectional planes.

Figure 6 is a bottom view of the central portion receiving the cleaning strips of the mop.

Figure 7 shows a section through the indicated sectional plane of the securing portion of Figure 6.

Figures 8 and 9 show views, in section and in accordance with a plan view, respectively, of the central portion or shield for securing the cleaning strips.

Figure 10 shows a detail of the securing of the central shield with respect to the part for supporting the strips.

Figures 11 and 12 show respective sections of a variant of the present invention.

Figures 13 and 14 are sections similar to those of Figures 11 and 12, corresponding to a second variant.

Figures 15 and 16 show sections corresponding to another variant.

As shown in the Figures, the present invention comprises a number of elongate cleaning strips of variable width, such as 1, 2 and 3, which are arranged radially in a regular or irregular form with respect to a securing portion 4 of the moulded type, preferably of plastics material, which has a cavity 5 for housing the shaft of the mop. The strips forming the cleaning elements are secured simply by pressure from the closing shield 6 fitted on the securing rods 7, 7', ... which are provided in varying number at the flange-shaped plate 8 of the securing portion 4. It is a characteristic feature that the shield 6 has a central opening 9 permitting improved entry and discharge for fluids and likewise that the rods 7, 7', ... are hollowed out axially in order to achieve improved resilience and their lower edges have substantially frustoconical widened portions, such as 10, 10', ..., which are held in mating housings 11, 11', ... on the lower face of the shield 6. The shield 6 has, on the said lower face, reinforcing ribs 12, 12', 12'', which vary in number in accordance with the number of securing rods and are arranged on the lower face of the shield in order to improve the rigidity thereof.

In a preferred version, the layers of cleaning elements are composed of a first layer of strips 1 of absorbent woven material and, below that layer, a layer of strips

of braid 2 and, further down or at the bottom portion, a layer of strips 3 of non-woven material.

This combination gives rise to very improved features of absorption and wringing out which optimise the functional character of the mop.

According to the variant shown in Figures 11 and 12, the mop is produced by means of an upper layer of strips 13 of the woven or non-woven type and a lower layer of strips 14 of braid, this being a simplified version which may be effective for certain types of cleaning.

In the variant of Figures 13 and 14, the upper layer of cleaning elements is composed of a number of strips 15 of woven material and the lower layer 16 is composed of a number of strips of non-woven material.

In another embodiment which is a variant of the mop of the present invention and which is shown in Figures 15 and 16, the first layer is composed of a number of strips 17 of non-woven material and the lower layer 18 is composed of a number of strips of woven material.

By means of the arrangement which has been explained in the preferred embodiment and in the embodiments constituting variants of the present invention, a very efficient construction of the mop is obtained which adds to its specific, very efficient, cleaning features a very economical construction, being simple to assemble and having optimum securing features for the cleaning elements.

#### Claims

1. Floor mop of the type that comprises a moulded part for receiving the handle, and a lower shield for securing the elements of the mop, characterised in that the mop is formed by a first layer of cleaning strips in a regular or irregular radial arrangement of an absorbent woven material followed by an intermediate layer based on strips of braid and a lower layer of strips of non-woven material, all in a regular or irregular radial arrangement.
2. Floor mop according to Claim 1, characterised in that the rods for securing the lower shield for holding the cleaning strips are hollowed out axially and have at their open edges external frustoconical widened portions mating with housings of a similar shape on the lower face of the holding shield, permitting their easy introduction and secure resilient retention.
3. Floor mop according to Claim 1, characterised in that the holding shield has a large central opening and a number of ribs on its lower face which start from the housings of the holding rods in order to achieve improved rigidity.
4. Floor mop according to claim 1, characterised in that it comprises a layer of cleaning strips of the woven or non-woven type and a layer of strips of braid.
5. Floor mop according to claim 1, characterised in that it comprises a layer of strips of the woven type and a layer of strips of non-woven material.
6. Floor mop according to claim 1, characterised in that it comprises a layer of strips of non-woven material and a layer of strips of woven material.

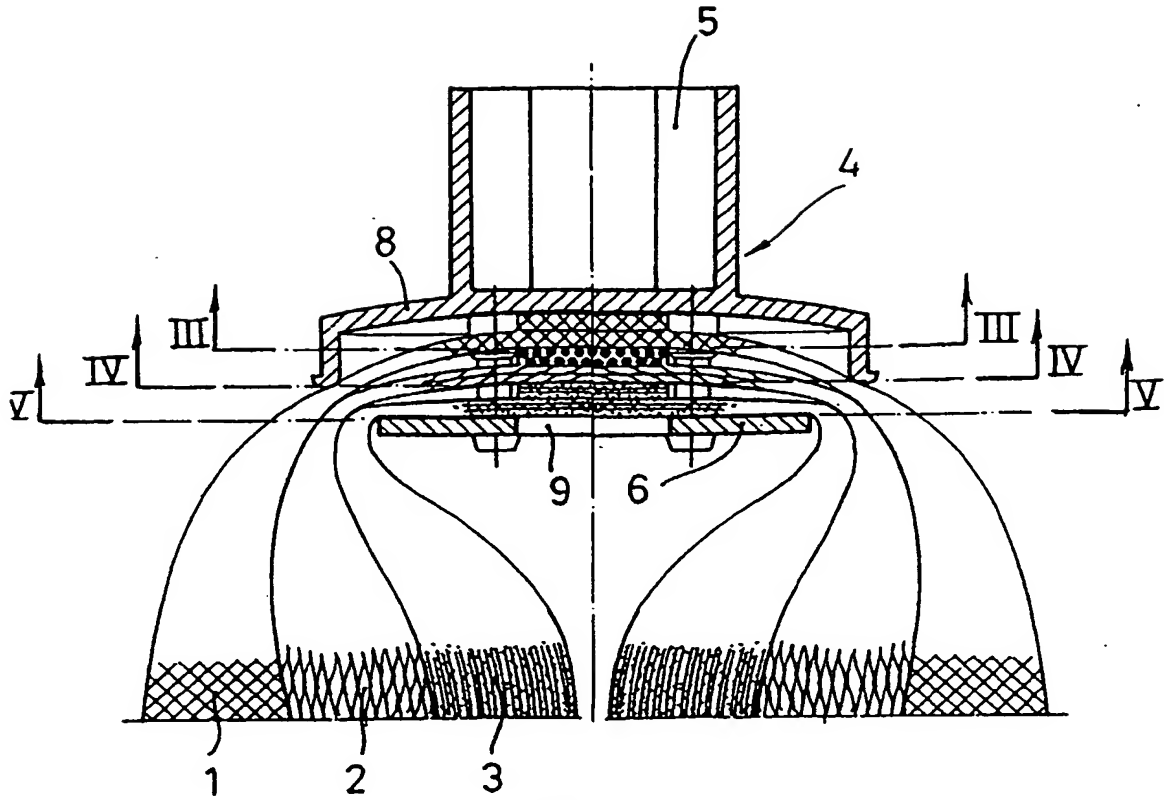


FIG. 1

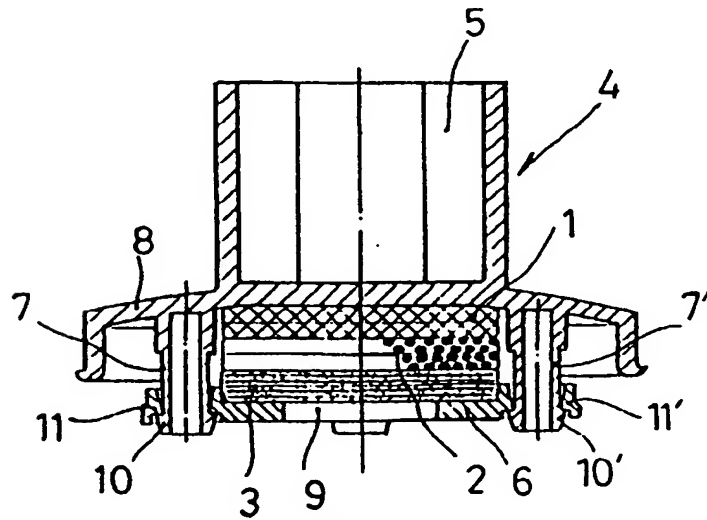


FIG. 2

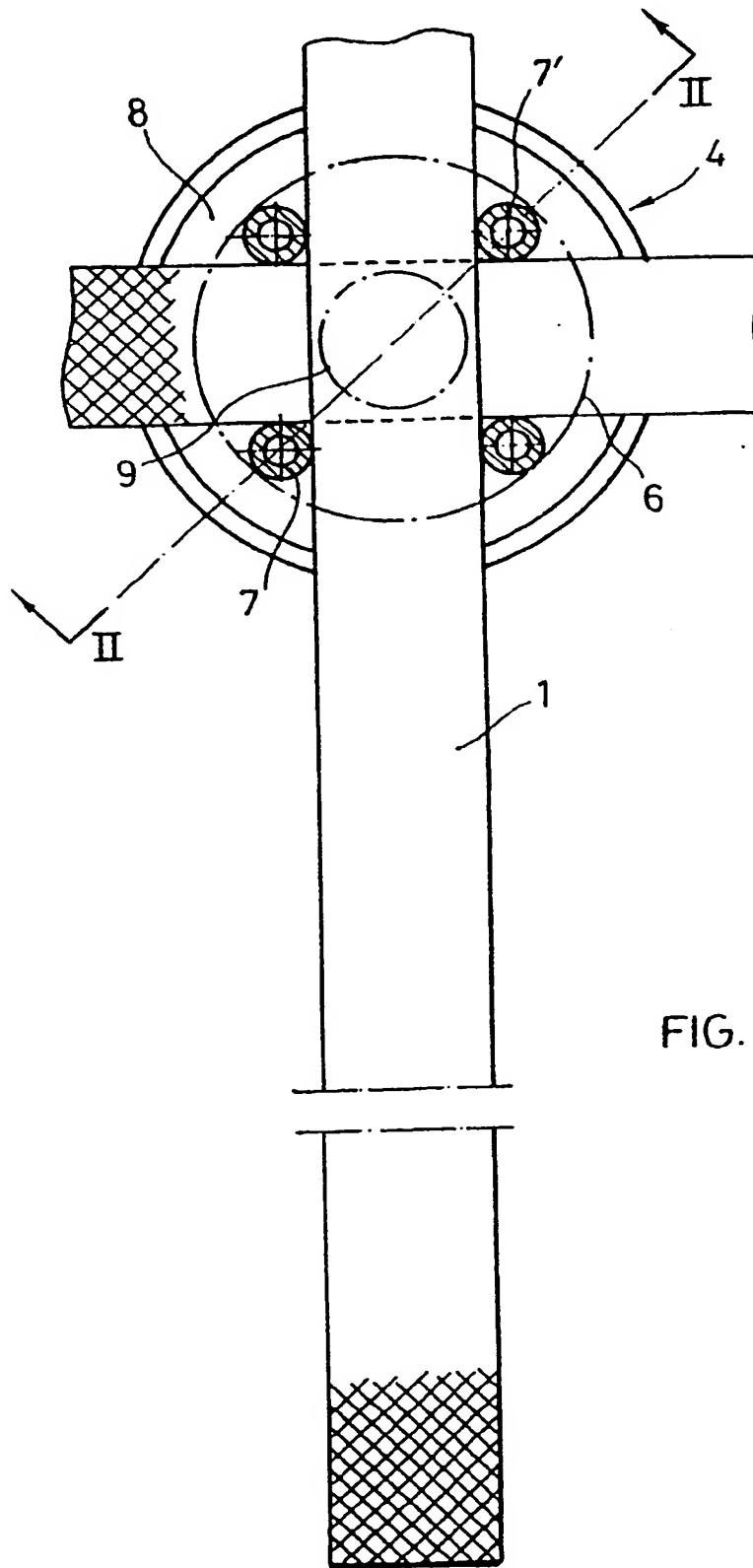
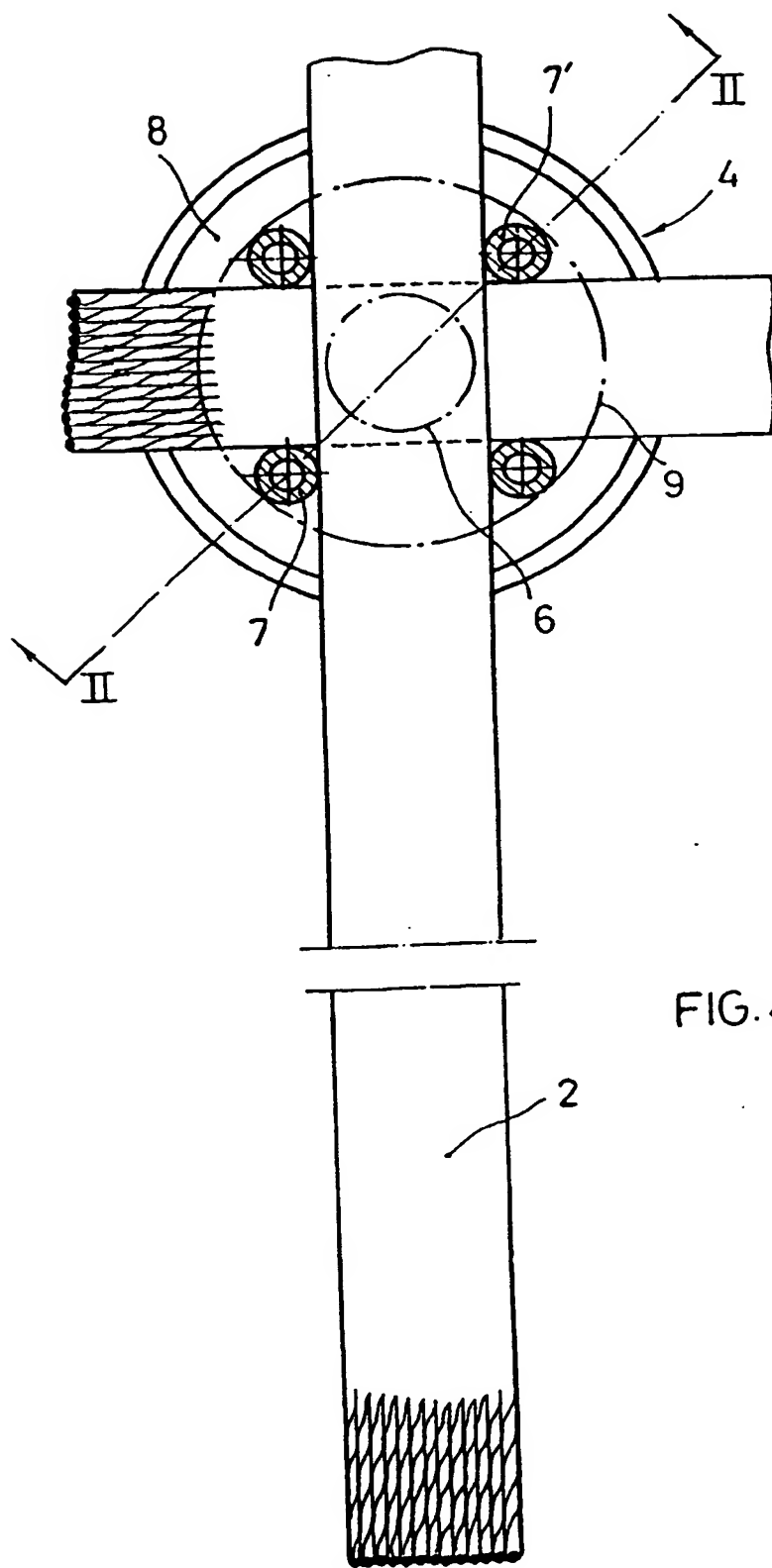
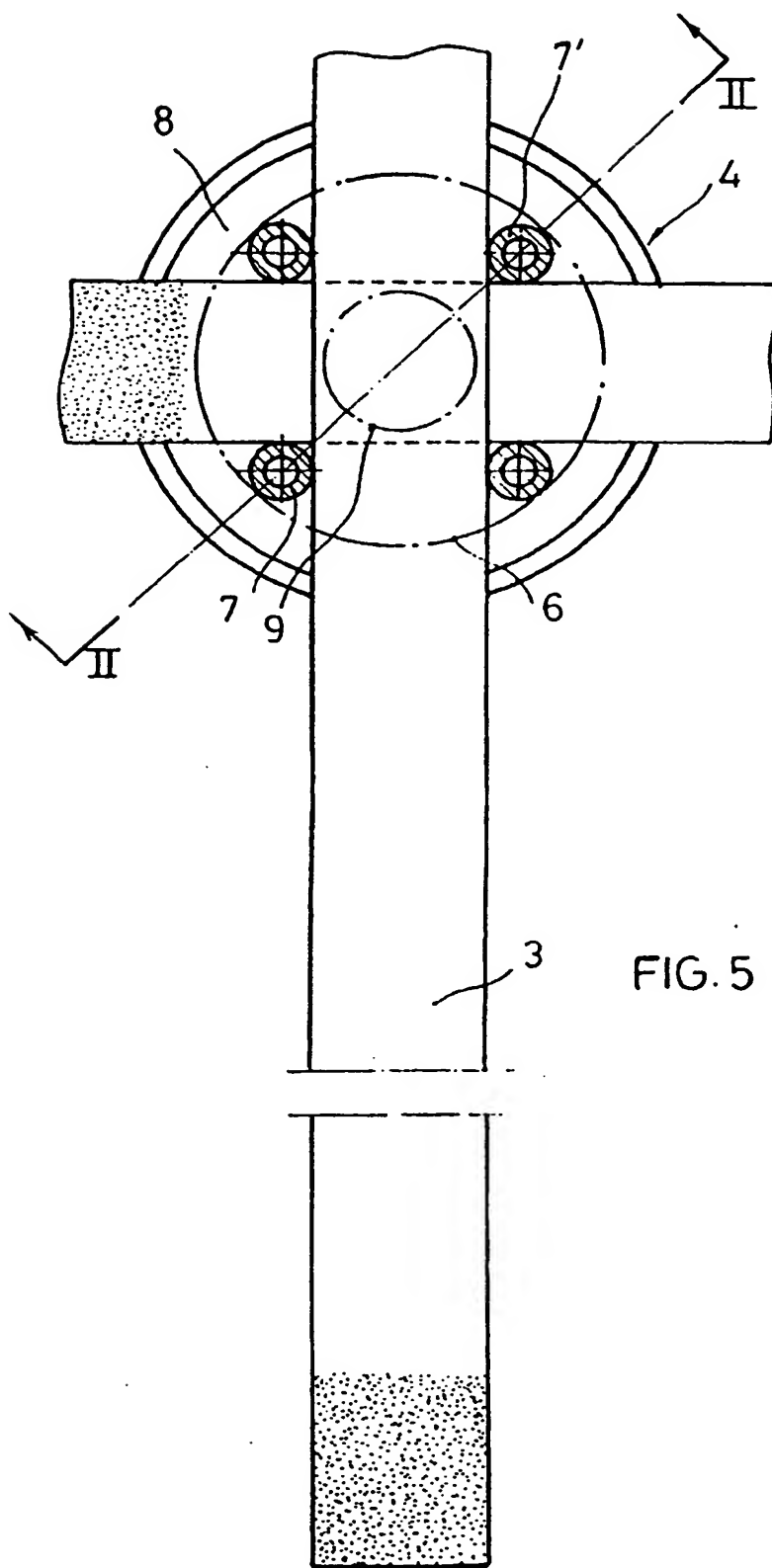


FIG. 3





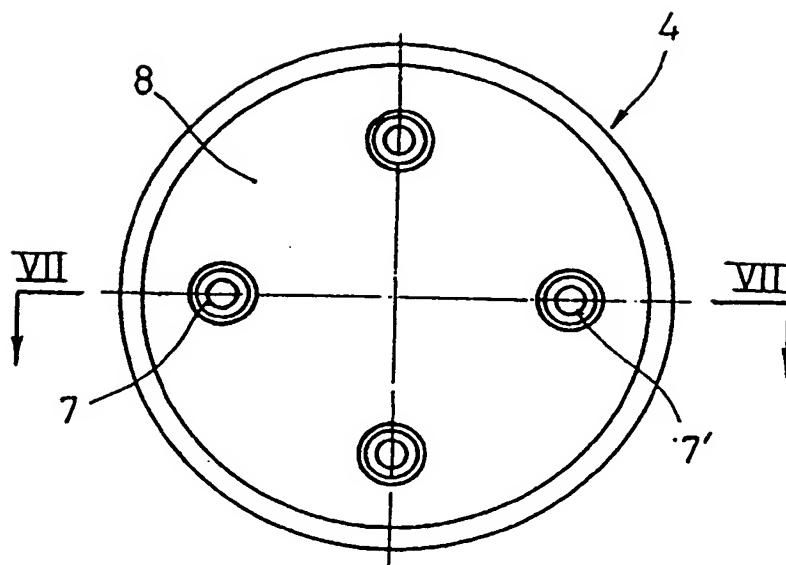


FIG. 6

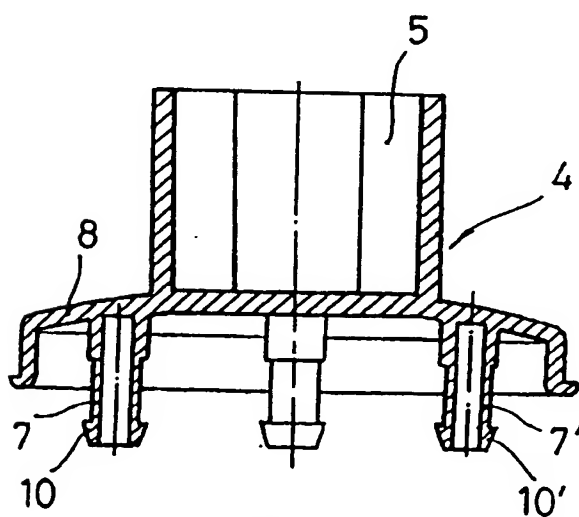


FIG. 7



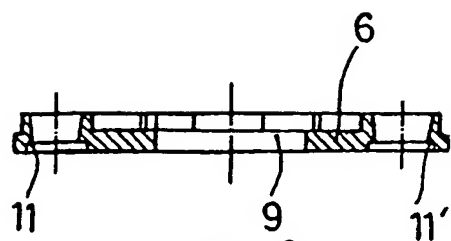


FIG. 8

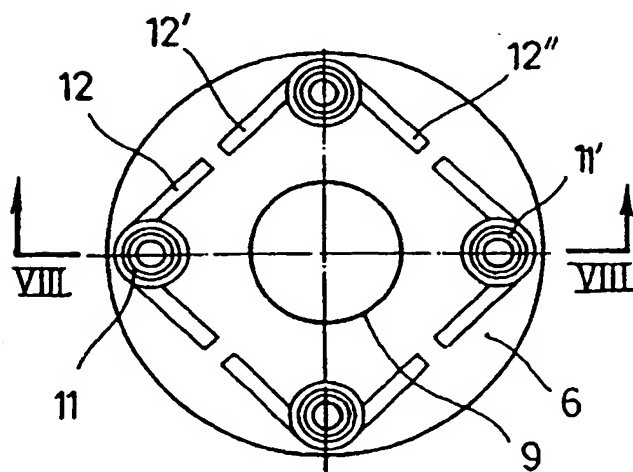


FIG. 9

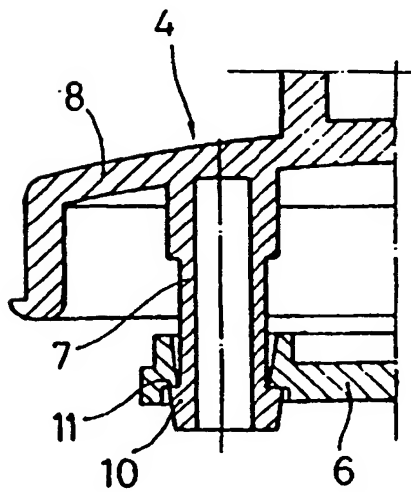


FIG. 10

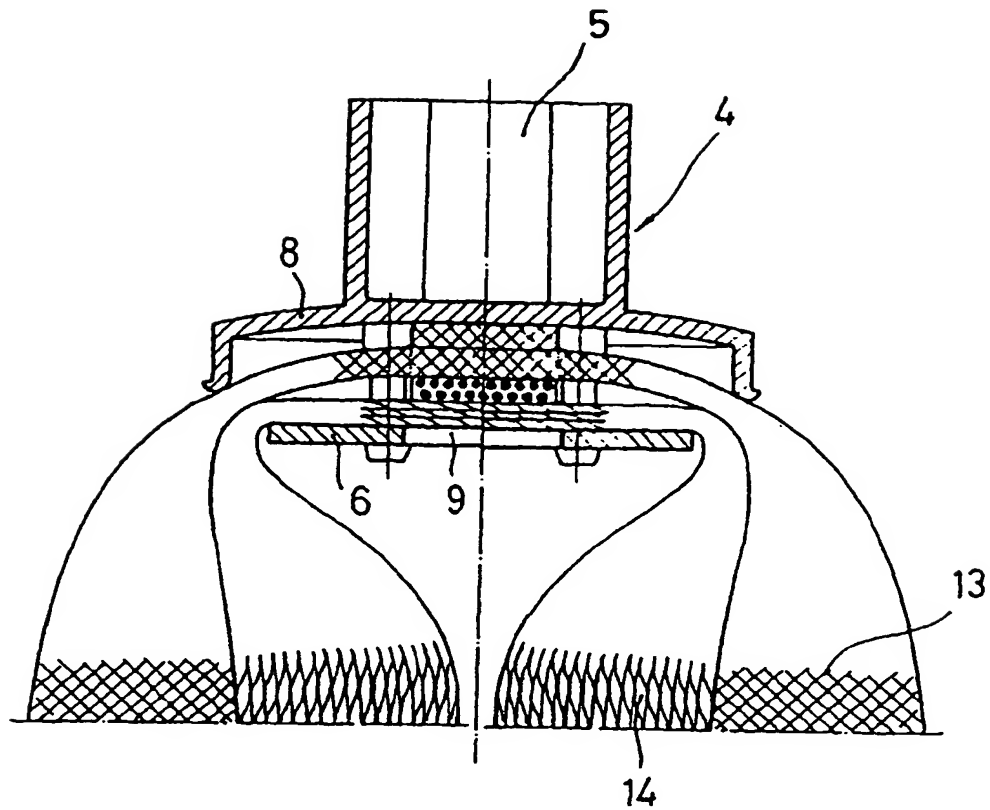


FIG. 11

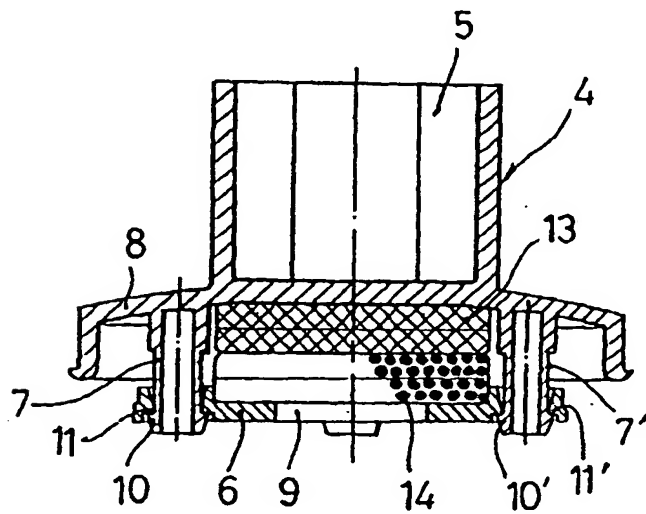


FIG. 12

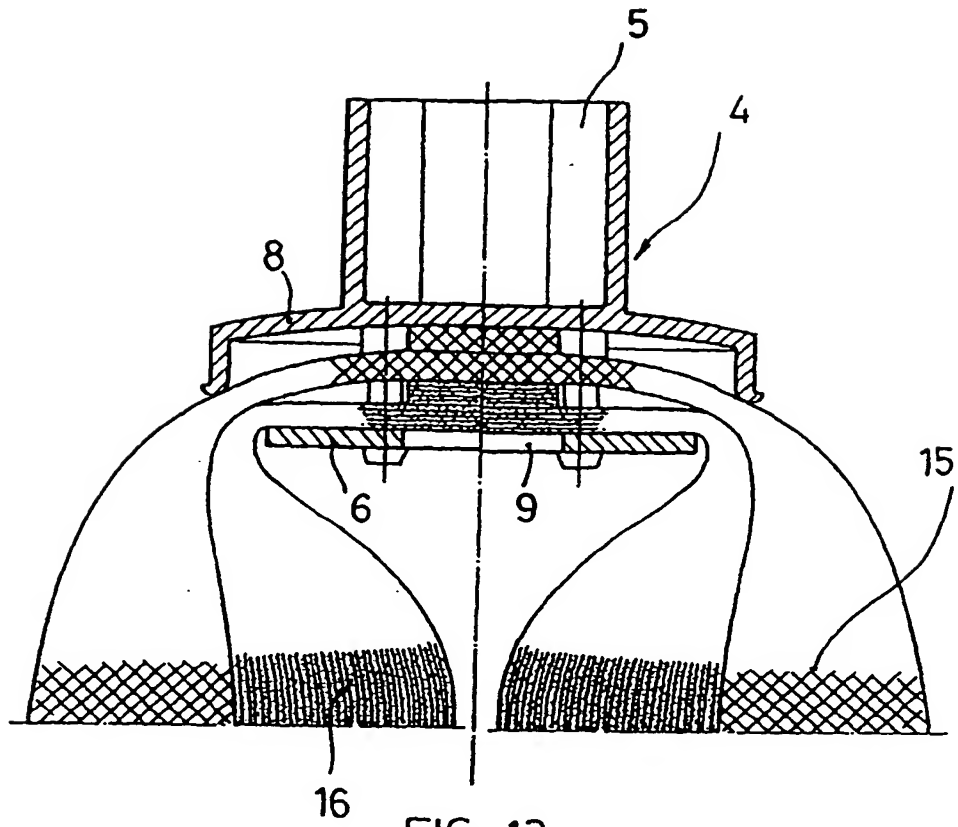


FIG. 13

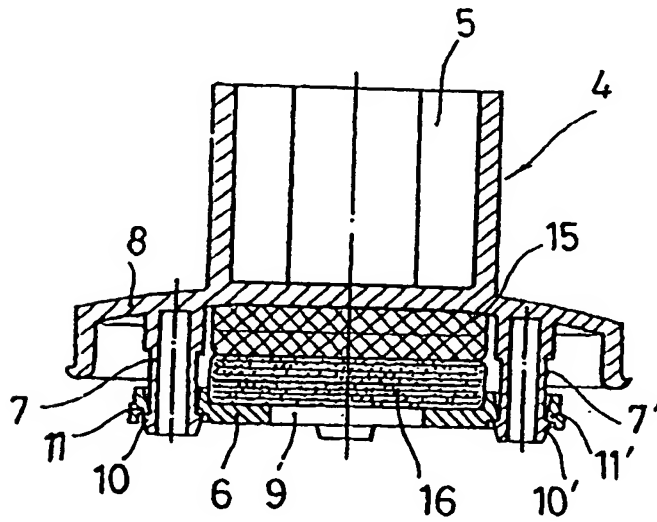


FIG. 14

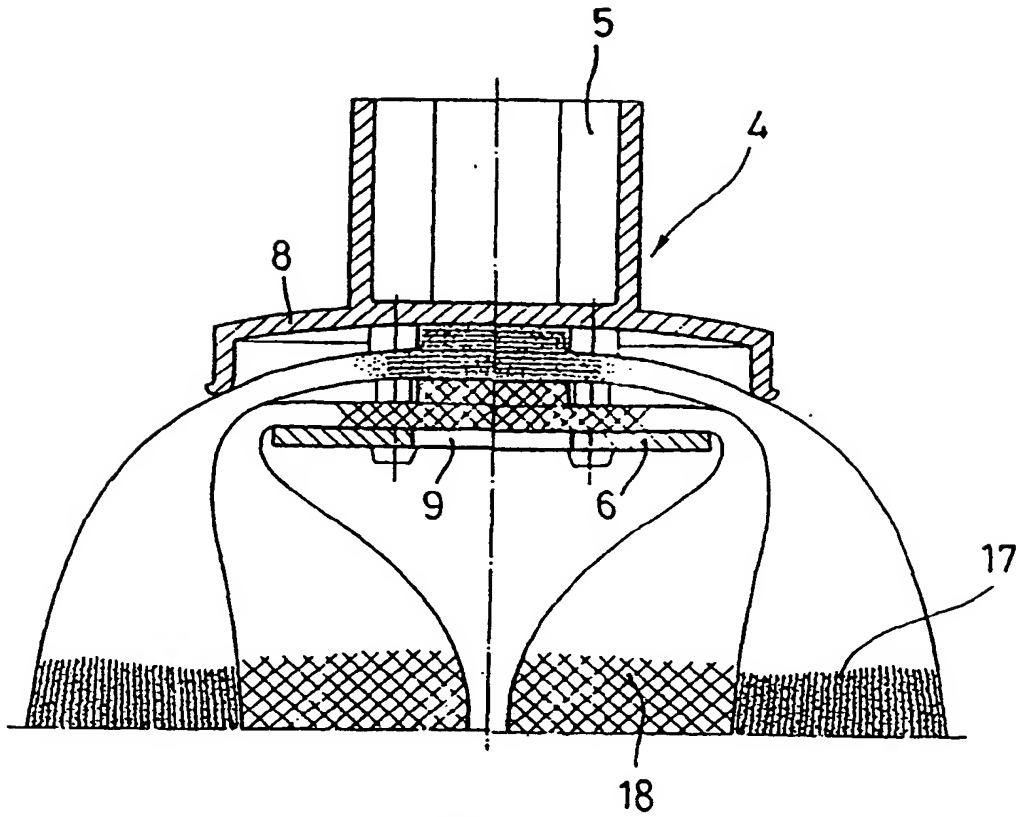


FIG. 15

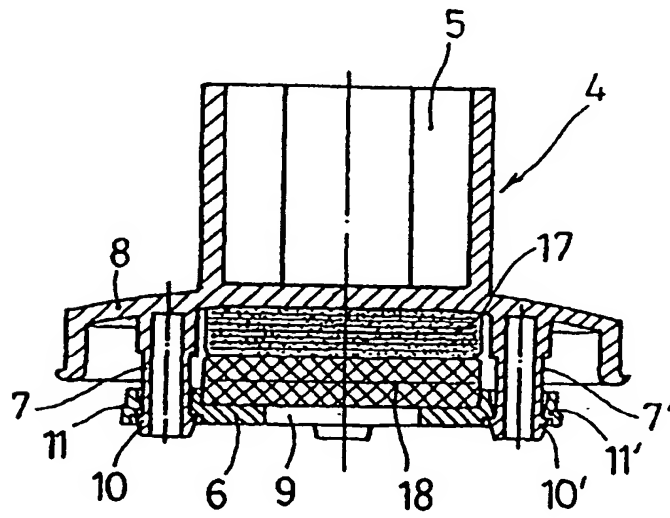


FIG. 16



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 96 50 0034

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claims	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
1 A	EP-A-0 537 963 (UNILEVER PLC ET AL.) * column 3, line 13 - line 31; figure 2 *	1,2	A47L13/20 A47L13/24
1 A	DE-A-38 02 198 (FUCHS ET AL.) * abstract; figures *	1	
1 A	US-A-4 114 224 (DISKO) * column 1, line 36 - column 2, line 17; figures 1-10 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A47L
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 10 July 1996	Examiner Kanal, P
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : oral-written disclosure  P : intermediate document</p> <p>I : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons</p> <p>Δ : member of the same patent family, corresponding document</p>			

EPN FORM 1503/01.92 (P01/01)